

Fig. 1A

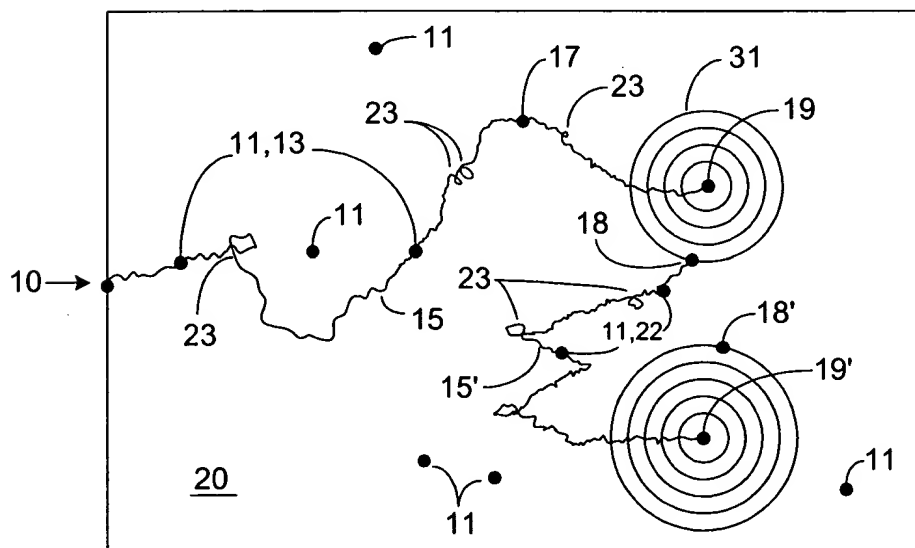


Fig. 1B

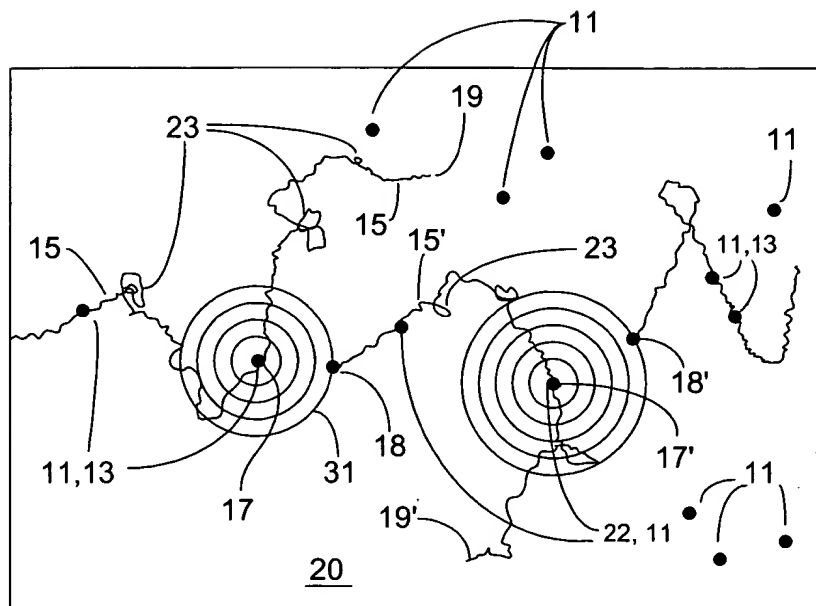
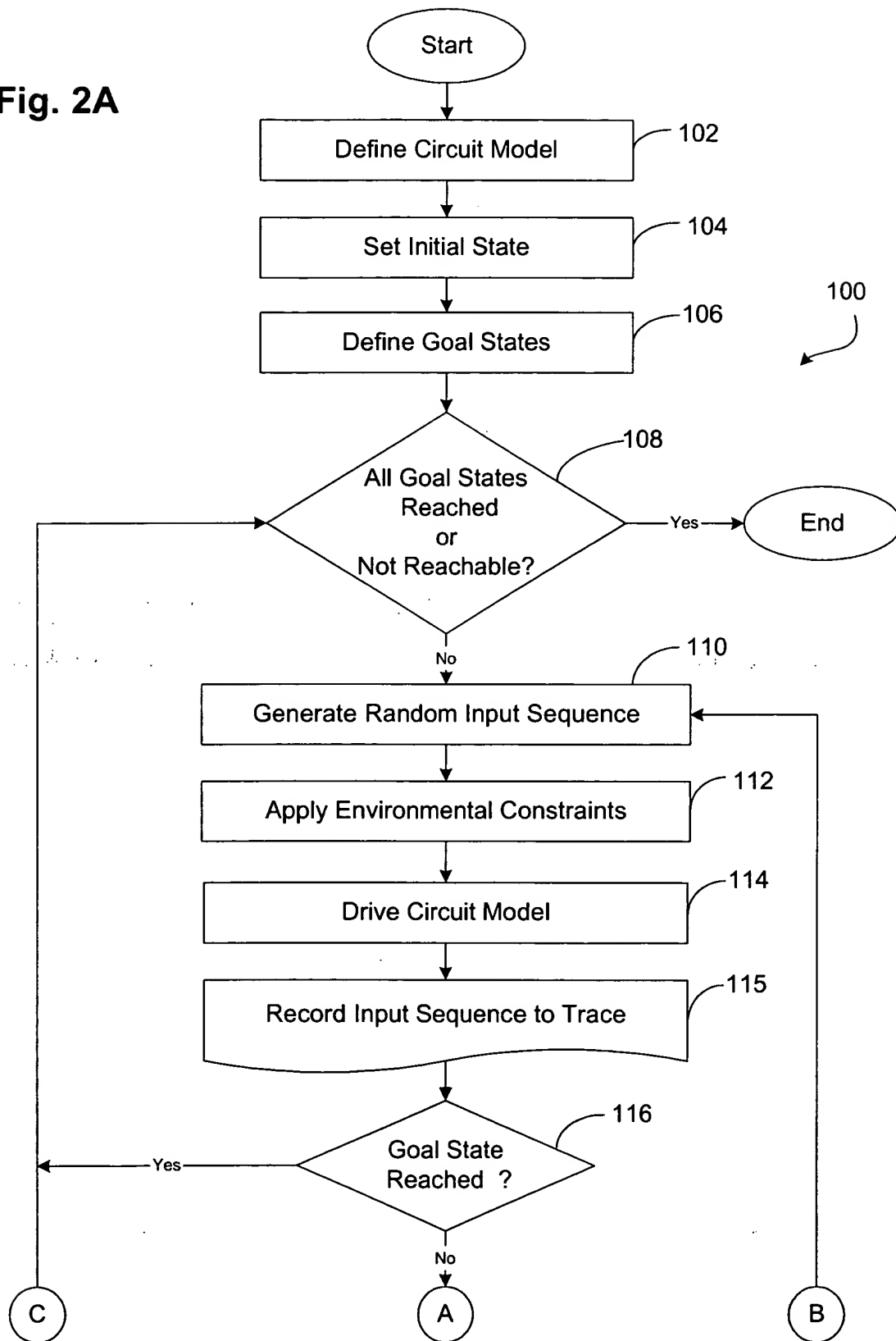


Fig. 1C

FIG. 1C

Fig. 2A



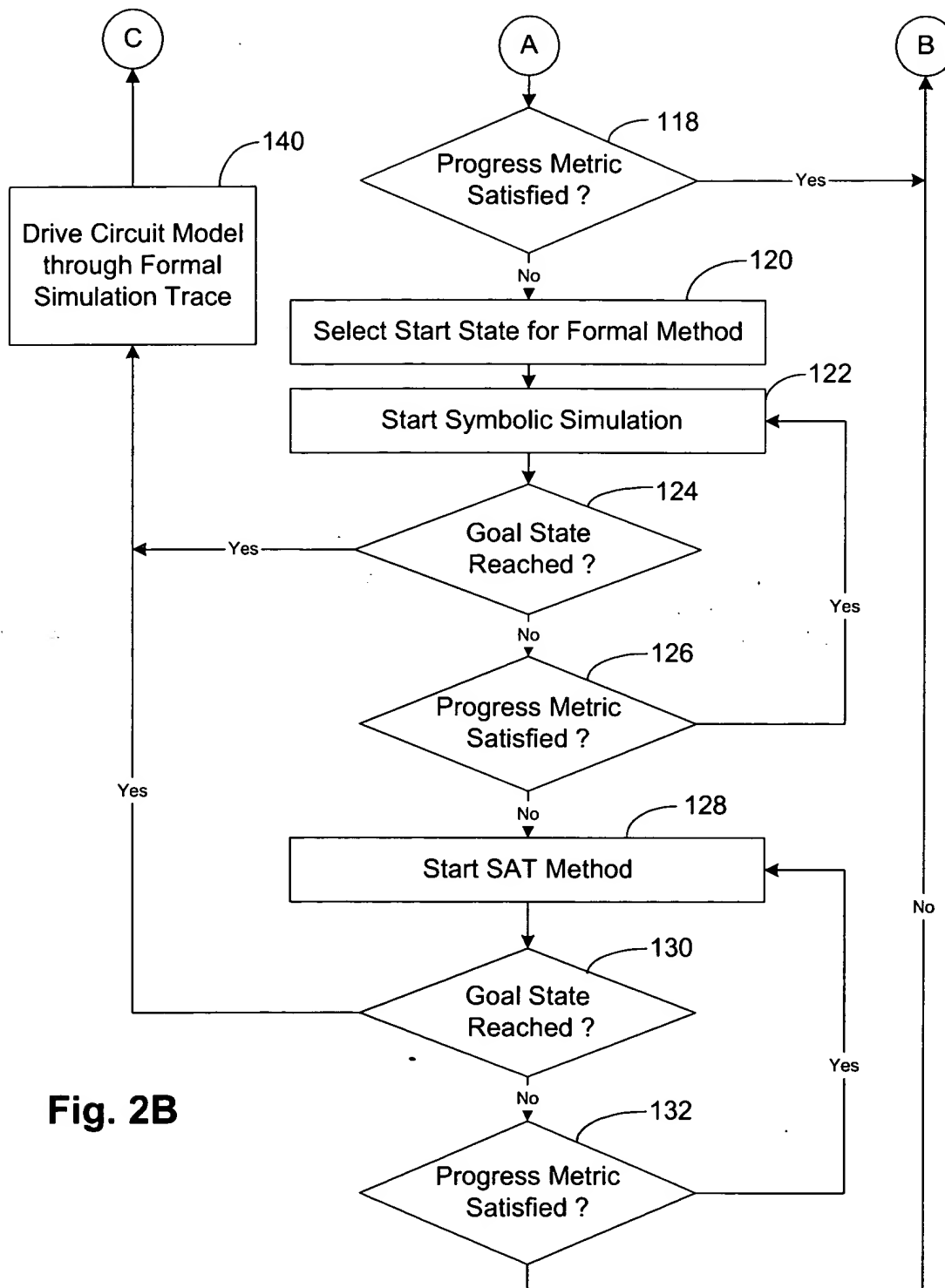


Fig. 2B

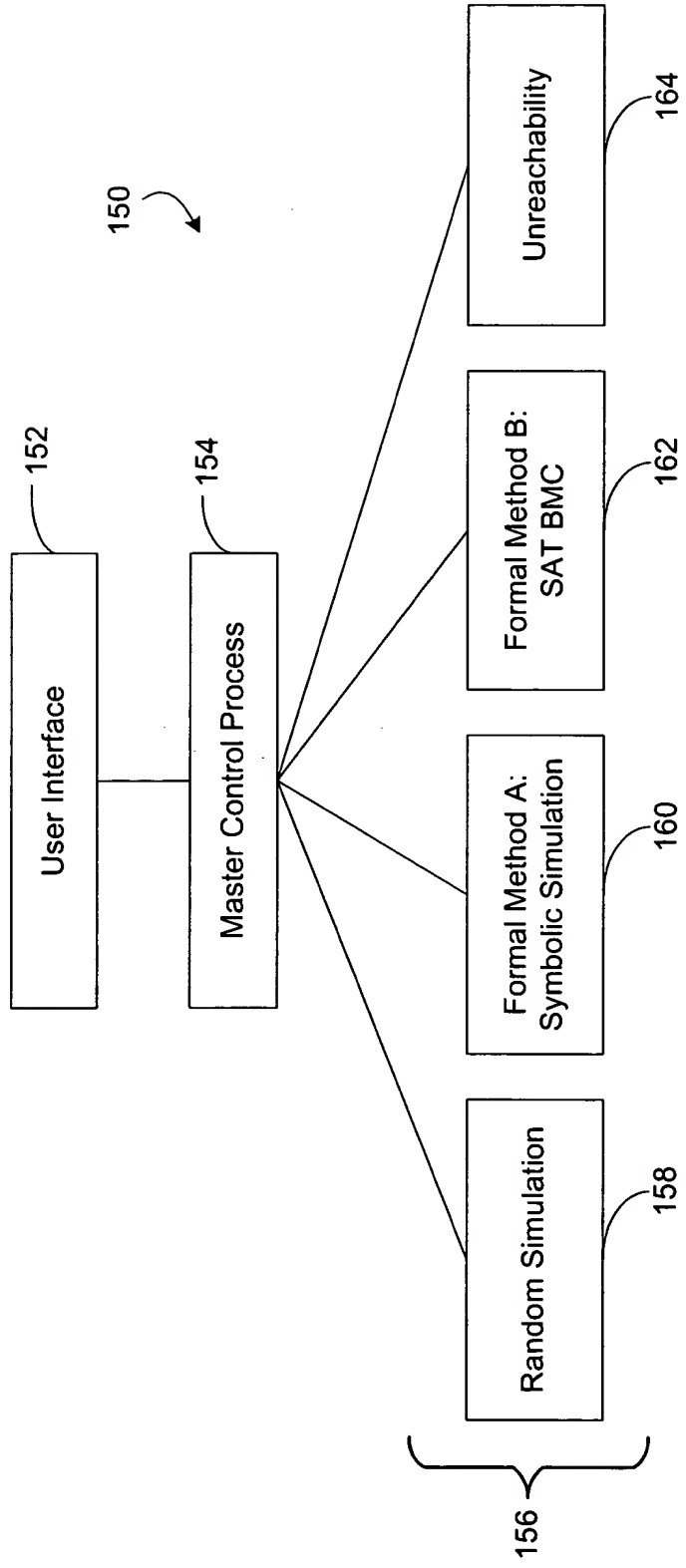


Fig. 3

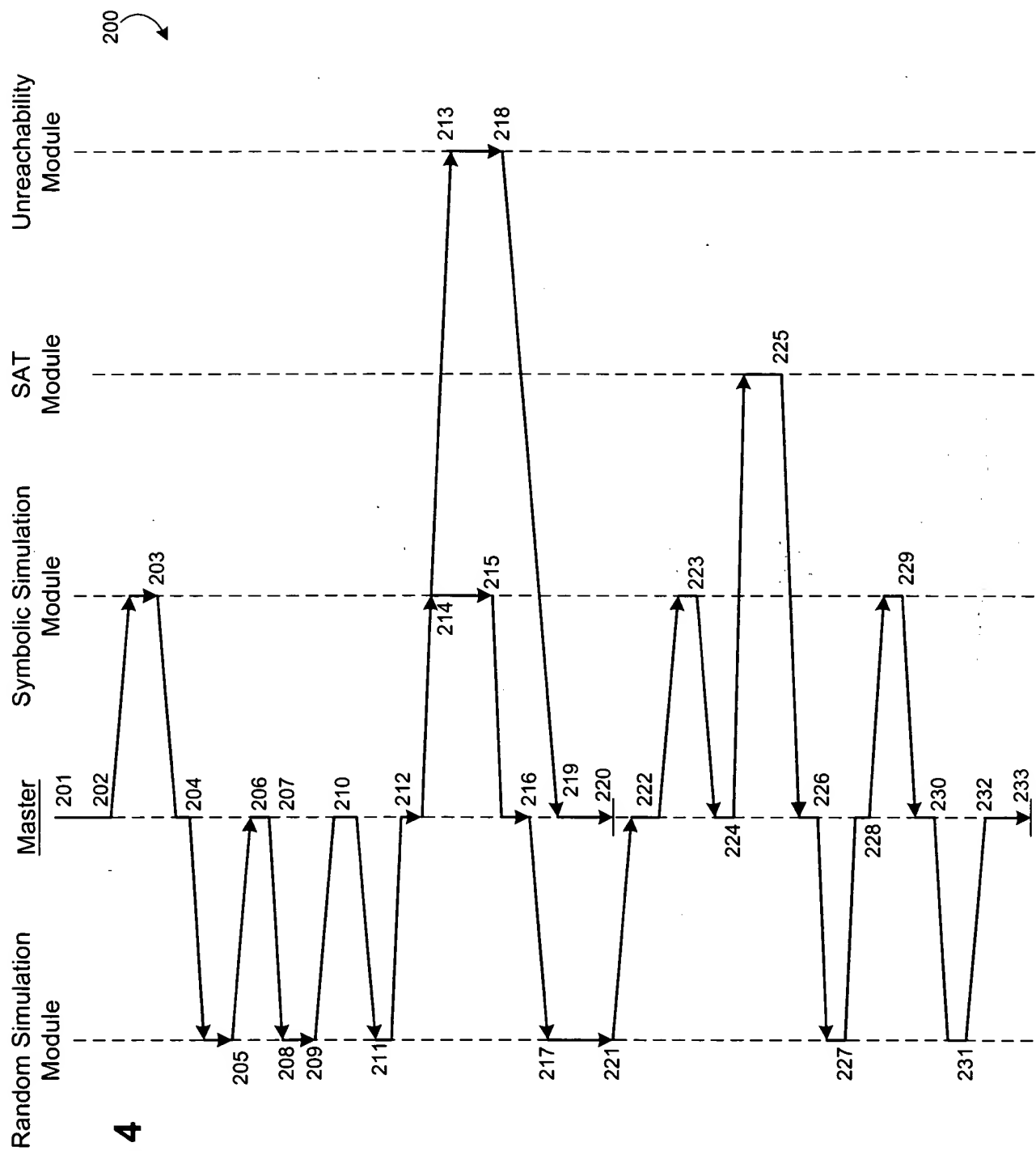


Fig. 4

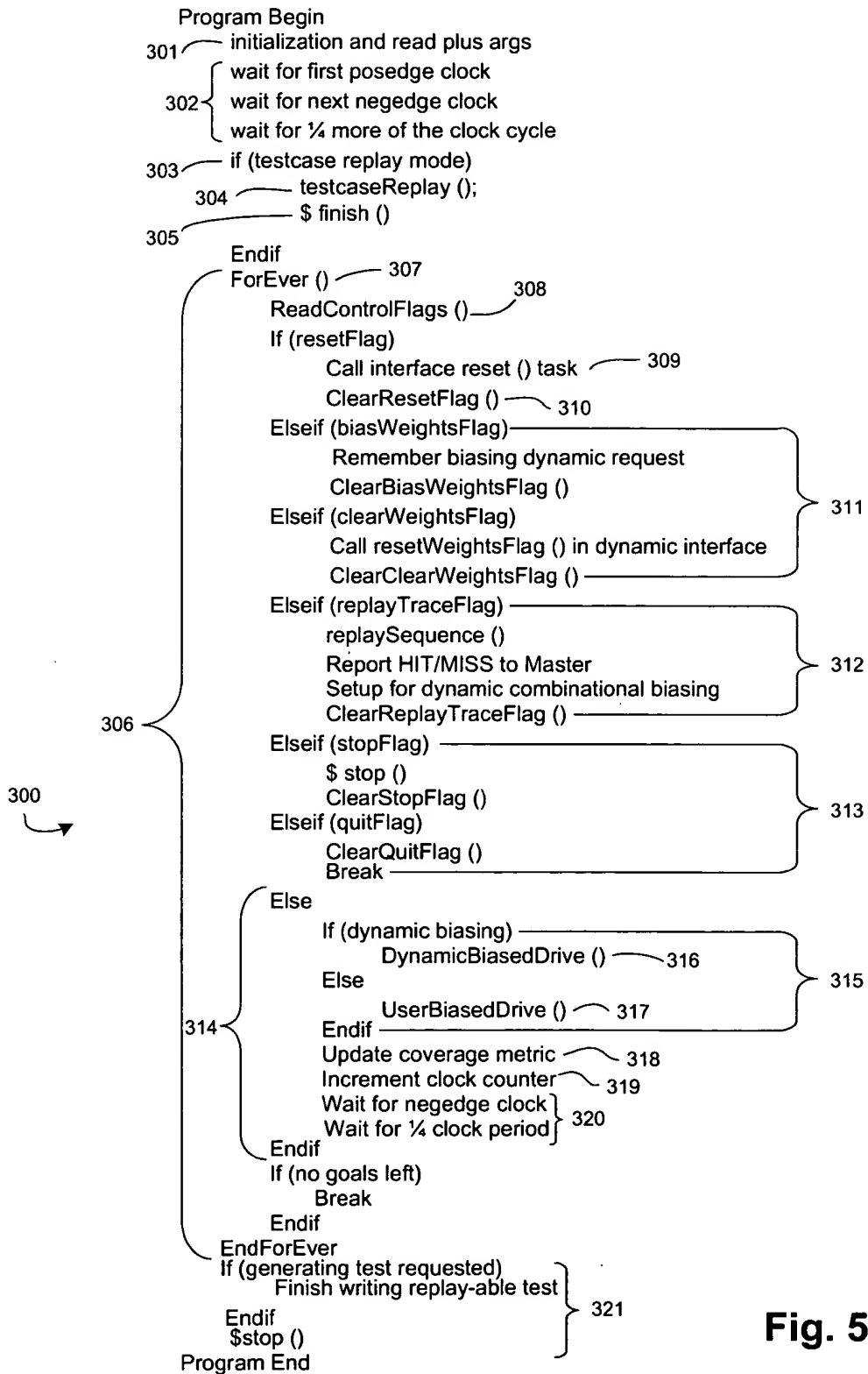


Fig. 5

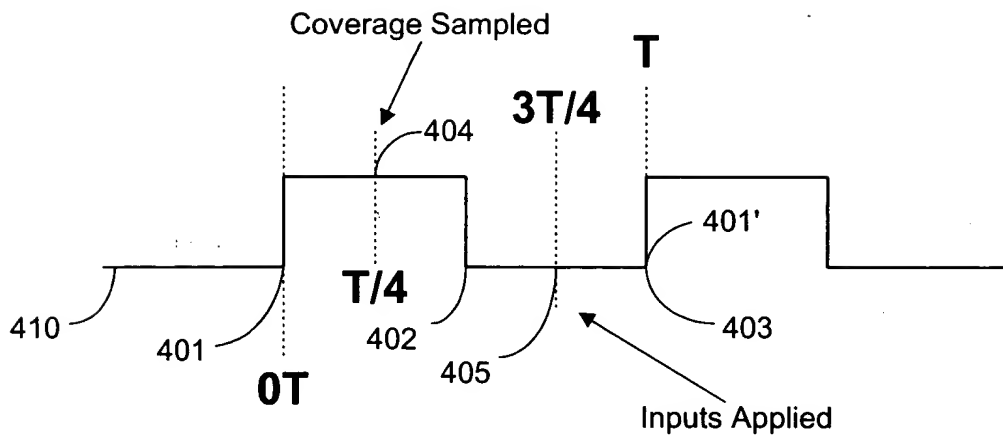


Fig. 6


```

330 ——— If (phase is MODE_INIT_SYM)
      331 ——— If (search found 0 goals)
            {
            332 { If (satCycMax>0)
                    set phase to MODE_SAT
                  Else
                    Set phase to MODE_SYMSIM
            }
            333 { Endif
                    Set non-init-phase VCS stop conditions \
                      & freshness using $configStopPointHV
                    push hv_vcs_stopped on VCS cmd stack
                    set VCS engine state to "running"
                    tell VCS to run
            }
      335 ——— Else
            {
            336 { Push hv_vcs_replay_done on VCS cmd stack
                    Tell VCS to bias weights
                    Tell VCS to replay a trace
            }
            338 { Set VCS engine state to "running"
                    Tell VCS to run (do the replay)
            }
            Endif
      340 ——— Elseif (phase is MODE_INIT_SAT)
            341 ——— If (search found 0 goals)
                  {
                  342 { If (symsimCycMax>0)
                          set phase MODE_INIT_SYM
                        Else
                          set phase MODE_SAT
                  }
                  343 { Endif
                          If (phase is MODE_INIT_SYM)
                            Call hv_run_formal
                          Else
                            Set non-init-phase VCS stop conditions \
                              & freshness using $configStopPointHV
                            push hv_vcs_replay_stopped on VCS cmd stack
                            set VCS engine state to "running"
                            tell VCS to run
                  }
            345 ——— Else
                  {
                  346 { Push hv_vcs_replay_done on VCS cmd stack
                          Tell VCS to bias weights
                          Tell VCS to replay a trace
                  }
                  348 { Set VCS engine state to "running"
                          Tell VCS to run (do the replay)
                  }
                  Endif

```

Fig. 7A

```

350 ----- Elseif (phase is MODE_SAT, MODE_SYMSIM_SAT, MODE_SYMSIM)
              If (search found 0 goals)
                {
352      { If (phase is MODE_SAT)
              If (symsimCycMax>0)
                set phase MODE_SYMSIM_SAT
              Endif
353      { Elseif (phase is MODE_SYMSIM_SAT)
              If (lastFormalEng was SAT)
                Set phase to MODE_SYMSIM
              Endif
355 ----- If (#consecMisses > formalMissThresh)
              Push hv_vcs_stopped on VCS stack
              Set #consecMisses to 0
356 ----- Tell VCS to reset
357 ----- Elseif (lastFormalEng was SYMSIM)
              Push hv_vcs_replay_done on VCS stack
              Tell VCS not to bias weights
358 ----- Tell VCS to replay a trace
359 ----- Else
              Push hv_vcs_stopped on VCS stack
              Endif
              Else
                If (#consecHits > formalClearThresh)
360 ----- Tell VCS to clear bias weights
                Endif
                If (back2back enabled)
                  Push hv_vcs_replay_done_on VCS stack \
                    (with BACK2BACK action)
                Else
                  Push hv_vcs_replay_done_on VCS stack \
                    (with RUN action)
                Endif
                Tell VCS to bias weights
364 ----- Tell VCS to replay
              Endif
365 ----- Set VCS engine state to "running"
              Tell VCS to run
              Endif

```

Fig. 7B